Kakamega Forest: a living classroom for the growing generation

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Un programme original d'éducation pour la conservation a été mis en œuvre auprès de certaines communautés villageoises vivant aux alentours de la forêt de Kakamega, dans l'ouest du Kénya. Ce projet a été financé par une bourse de l'African Bird Club, et l'article en présente les premiers résultats et impressions.

Kakamega Forest

Along the Kisumu–Eldoret road, 300 km west of Nairobi, Kenya, lies the only true remaining patch of tropical rainforest in Kenya—Kakamega Forest.

Kakamega Forest covers an area of 15,480 ha and is the easternmost outlier of the Guinea–Congo forest, and biogeographically unique. It harbours more than 200 forest-dependent bird species, 16 found nowhere else in Kenya. Two species are globally threatened, Turner's Eremomela *Eremomela turneri* and Chapin's Flycatcher *Muscicapa lendu*. Kakamega is a haven for naturalists and researchers, and is renowned for its unique fauna and flora, harbouring 20% and 75% of all Kenyan plant and butterfly species. The forest has recently been listed as a globally important biodiversity site, making it a key area for conservation[1].

Kakamega is a tiny island within a sea of needy people, as the area surrounding the forest has one of the highest human densities in the country (268/km^2). This has resulted in increased pressure for land and forest-based resources. Uncontrolled firewood collection, forest grazing and illegal logging are some of the problems facing Kakamega. The forest, with its rich flora and fauna, could disappear unless these illegal and unsustainable activities are addressed.

The programme

During World Environment Day in 1999, an initiative of the United Nations Environment Programme (UNEP) celebrated annually across the world on 6 June, students from nine schools around Kakamega Forest, teachers, headmasters and the area Chief were treated to 23 songs, three plays and several poems presented in different languages, including the local language, Kiswahili, and English. A play by Muleche Primary School was particularly impressive. Artwork with messages about the birds of Kakamega, theme of the year, as it related to the IBA programme, was displayed in the field. This event sparked off the ABC-funded pilot education programme in Kakamega Forest, which has been conducted in tandem with the ongoing Kakamega Environmental Education Programme. The programme, *Save the vanishing birds of Kakamega forest, investing in the young generation through conservation education*, focuses on providing environmental education within schools.

Children consider their parents to represent 'Mr and Mrs Right', emulating everything they see them say and do, irrespective of the consequences. In Kakamega, communities use natural resources to meet their various household needs, in most cases unsustainably, and such practices are passed on from generation to generation. The programme aims to cultivate enthusiasm for, and skills in, birdwatching among the pupils as a stepping stone to creating awareness about other environmental concerns in Kakamega Forest. It is hoped that this will have a long-lasting impact. Specifically, by focusing on birds, the programme sought to provide pupils, teachers and wildlife clubs with an understanding of Kakamega Forest and its biodiversity, and the threats the area faces. It is hoped that if the students grow up knowing the value of the forest, they will become agents of change in their own community in the future.

Phase I: visits to schools

The first phase of the programme involved visits to schools by members of Kakamega Guides Association. These visits consisted of:

Meet school headmasters, patrons and other interested teachers, and fix a meeting day during the week.

Meet the club or students interested in forming a club:

- Give a short lesson on what a wildlife or conservation club is (assisted by the teachers)
- A short game with the pupils to stir up their interest.

Short presentation:

- Kakamega forest
- What are birds
- Importance of birds study table
- How to construct a bird-feeding table.

Short bird walk in the school compound

- Identification of common birds
- Teaching observation skills (listening, behaviour, watching).

Small booklets on birdlife of Kakamega were used.

Results

A total of 22 schools and over 800 pupils have had contact with the programme. During the visits, theoretical lessons on the history, geography, importance, and problems facing Kakamega Forest were conducted. Particular emphasis was placed on areas that feature in the school curriculum. In similar visits within the school compounds, pupils identified plants using local and English names, and learned of the traditional uses and myths attached to some trees. As a result, three schools have already formed conservation clubs, and in one—Shabwali secondary school—membership has grown to 47, with elected officials/office bearers. Other schools, not previously involved in the project, have requested visits from the programme.

Bird identification formed a major part of the entire programme, including the use of coloration, shape and size of the bill, and size of the bird, among other features. Pupils were instructed in identifying different habitats for birds within their school compounds and discovering which were the best for birdwatching. The overall aim was to compile bird checklists for individual schools. By observing the manner in which different species feed, pupils identified certain specific adaptations, especially in the size and shape of bills, as part of the schools' science curriculum.

Four core schools (those demonstrating exemplary interest and performance) commenced mini-projects, which involved writing about different traditional beliefs concerning birds that served to enhance their conservation/protection, and the role these species played in the AbaLuhya people's lifestyles. Some of the more remarkable beliefs that pupils, from three different AbaLuhya subtribes (Isukha, Tachioni and Kabras) living around Kakamega Forest, collected from their grandparents are presented below.

sunbirds *Nectarinia* spp. (Muchuni)
Boys who had not passed through circumcision rituals should not kill these species; failure to observe this stricture would lead to their bleeding profusely during the ritual.

sparrows *Passer* spp. (Lirolesi)
The local name is believed to derive from dreaming (Khulora) among the Isukha subtribe. Among the Tachioni and Kabras these species, which are known to collect different items for nesting, are associated with witchcraft and sorcery.

Pin-tailed Whydah *Vidua macroura* (Isimbishila)
The Tachioni practised polygamy; in cases where one wife wanted more favour from her husband, she would roast a whydah for him in order to achieve this. Among Kabras this bird is believed to attract customers to a business.

weavers *Ploceus* spp. (Matekeye)
Among Tachioni these birds were thought to bring wealth and were considered to be an omen of impending good fortune whenever they were seen nest-building around a home.

Red-cheeked Cordonbleu *Uraeginthus bengalus* (Khasisi)
Among Tachioni it was believed to be an essential part of the homestead. The Kabras, on the other hand, believed that it should not be killed and, if killed, would signal the end of good luck.

lovebirds *Agapornis* spp. (Ingringeri)
Lovebirds were rarely seen in Luhya land, being noted very occasionally during the course of a year. Among Tachioni, anyone seeing a lovebird was viewed as a hero in society, and these species' presence was considered beneficial. Among Kabras, they were seen as a blessing when they visited fruiting *Ficus* trees around homesteads, but the whereabouts of their nesting areas were unknown to local people.

Black-and-white-casqued Hornbill *Ceratogymna subcylindricus* (Ling'ang'a)
Among Isukha this species was known to invite a bright good day, but if it was not seen or heard the day's weather would be dull.

Hamerkop *Scopus umbretta* (Namulobi)
This comparatively small bird is known to build a huge, unmistakable nest, usually near streams. Among Kabras, a nest within a farm was considered a community blessing, while the nest was also associated with a welcoming home—especially because other birds, rodents and sometimes tree snakes would occupy the nest, once abandoned.

Cattle Egret *Bubulcus ibis* (Inyanji)
Well known for trailing livestock and wild mammals while grazing, Kabras believed that when it appeared among a herd, it signalled good livestock husbandry, which would lead to an increase in wealth.

falcons *Falco* spp. (Shikakalila-Is, Shikhokorero-Kab)
One falcon was known for its ability to hover expertly in the air. Among Kabras, Isukha, and Tachioni this

species was believed to rarely lose its feathers. In the event that it lost a feather while hovering, it was believed that the bird would retrieve it. If a feather happened to fall within a homestead it was considered an omen of good luck and that the entire family would be endowed with much wealth.

White Stork *Ciconia ciconia* (Makunyi)
Storks were a sign of festivities at the end of the year. In addition, Tachioni and Kabras believed that locusts followed the species and if it was seen on migration, people feared locusts would arrive shortly.

African Harrier Hawk *Polyboroides typus* (Liyayi)
This species was known for predating more than one young chicken at a time. Its name derives from the action of picking more than one item at a time and flying away (Khuyaya).

Reactions/questions from pupils

The following are some of the questions that pupils asked at the end of talks held in different schools. Most of the questions were similar or related, and this is a summary of the principal ones:

Q Why do we conserve fierce animals like snakes, leopards, and buffaloes?
A They help to balance the environment, and attract tourists and researchers.

Q How does the government provide forest conservation?
A By employing forest guards, forest extension officers and foresters, and by encouraging other organisations to undertake projects in the forest.

Q What qualifications are required in order to become a game warden?
A O-level passes in English, Mathematics, Geography and Sciences, and a strong interest in natural history.

Q How does Kakamega Forest contribute to the economy of Kenya?
A It attracts tourists, mainly birdwatchers and botanists, thus creating employment for Kenyans as wardens, rangers, foresters and guides, as well as promoting education in various fields.

Q How many tourists visit Kakamega Forest?
A The annual number has increased from 353 in 1990 to 4,278 in 1998, and the total continues to increase each year.

Q Is the forest important to Egyptians and North Africa?
A Yes; through the streams that have their source in the forest and then join the main rivers flowing into Lake Victoria, which is the source of the River Nile, whose water is used for irrigation in Egypt and other countries further north.

Q What is the difference between National Park and National Reserve?
A National Parks are located on state-owned land and are manned by government officials through the Kenya Wildlife Service. National Reserves are largely situated on trust land and are manned by local government employees.

Q How much rain does Kakamega Forest receive?
A Over 2,000 mm per annum.

Q What is the meaning of the term biodiversity?
A Variety within life forms, referring to plants and animals and their environment.

Q What would happen if all the forests were cut down?
A A source of life—water—would be lost. The air would loose its purifier, soil erosion would increase and land would become unsuitable for farming, while temperatures would also be affected.

Q If man evolved from primates, birds from reptiles, what of plants?
A Plants are also a product of evolution, but most ancient plants appear to have disappeared.

Q Why are De Brazza's monkeys not found in the main Kakamega Forest?
A Further research is required; they were introduced in 1998 around one of the streams but have since disappeared.

Q Are there any differences between different snake poisons?
A Yes, some affect the nerves and others the blood.

Q Why must we learn about wetlands?
A They provide a home for many living organisms, and Man with food, building materials and water.

Case study: Buyangu primary school

Buyangu primary school is located on the east edge of Kakamega Forest and is one of more than 22 schools that have benefited from visits and talks by Kakamega Forest Guides through the ABC-sponsored pilot conservation education programme in collaboration with Kenya Wildlife Services. The school was founded in 1976 and has 272 pupils (148 boys and 124 girls) with nine teachers. It has nine clubs, among them a wildlife/bird club, which is the most active, scouts and girl guides, a geographic club, and debating, drama and music clubs. The bird club is one of the most successful of the school clubs involved in the pilot

Figure 1. Buyangu primary school tree farm, located at the forest edge (Solomon Ngari)

Figure 2. Bird-feeding table and hide constructed by Buyangu bird club (Solomon Ngari)

Figure 3. Buyangu bird club and its patron (Solomon Ngari)

education programme, and has a tree farm with over 100 trees. A bird-feeding table and hide, where club members and other pupils can watch study birds at a close range, have been erected.

During a recent Wildlife Clubs of Kenya competition in the Kakamega region, the first five best pupils came from Buyangu primary school—the bird club has over 20 active members, headed by Eric Lichungu (Chairman), Benjamin Ingutia (Secretary) and Eunice Sachita (Treasurer). The school has a very good relationship with the Kenya Wildlife Service and has received donations in the form of desks and a piece of land to expand the school. Buyangu primary school participates in other national events such as soil conservation, games and Wildlife Clubs quizzes. It hopes to involve more pupils in the activities of Important Bird Areas (IBA) programme in Kakamega.

Phase II: visits to the forest

The aim of this phase was to provide pupils with first-hand experience of the forest, construct environmental games, debate different aspects of the forest, and conduct forest walks and competitions. This phase is ongoing and further progress reports will be made to ABC.

Problems and Constraints

- Time allocation: it has been difficult for guides to find time to devote to school visits and also guide tourists, which is their only source of income.
- Travel expenses proved to exceed the predicted budget.
- Lack of support and goodwill from some school heads and patrons has led to slow progress in some areas.
- This was the first donor-funded project administered by the group. Some group members had expectations beyond those that could be achieved through available funds, which caused some conflicts and delays in implementation.

References

1. Stattersfield, A.J., Crosby, M.J., Long, A.J. and Wege, D.C. 1998. *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation*. Cambridge, UK: BirdLife International.

Nature Kenya, c/o East Africa Natural History Society, Museum Hill, PO Box 44486, Nairobi, Kenya.

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